CLAIMS

[1] An optical information reproduction device, comprising:

an information recording medium that includes a recording unit capable of recording information three-dimensionally and provided with a track having a specific track pitch, with which information is recorded by forming a plurality of recording marks along the track of the recording unit by a mark length recording method, and when the track direction of the recording marks is assumed to be their longitudinal direction and the direction perpendicular to the track direction is assumed to be their lateral direction, for recording marks located substantially in the same plane, the total area of elongated recording marks, whose longitudinal length is greater than their lateral length, is greater than the total area of recording marks having other than elongated shapes;

a first light source for emitting reproduction light having a wavelength λ_1;

an objective lens for focusing the reproduction light emitted from the first light source on the recording unit of the information recording medium; and

a first photodetector for detecting a reproduction signal from the reflected light from the recording unit,

wherein the information recording medium has a track pitch of no more than 1.3 times the wavelength λ_1 of the reproduction light, and

when focused on the information recording medium, the reproduction light includes as its main component a polarized light component that is polarized perpendicular to the track direction of the information recording medium.

[2] The optical information reproduction device according to Claim 1, wherein the reproduction light focused on the recording unit is linearly polarized light that is polarized perpendicular to the track direction of the information recording medium.

[3] The optical information reproduction device according to Claim 1, wherein the reproduction light focused on the recording unit is elliptically polarized light whose main component is a polarized light component that is polarized perpendicular to the track direction of the information recording medium.

[4] The optical information reproduction device according to Claim 1, wherein the first light source emits reproduction light that includes as its main component a polarized light component that is polarized perpendicular to the track direction of the information recording medium.

[5] The optical information reproduction device according to Claim 1, further comprising an optical component, located along the optical path between the first light source and the objective lens, for switching the state of polarization of the reproduction light emitted from the first light source so that the reproduction light focused on the recording unit will include as its main component a polarized light component that is polarized perpendicular to the track direction of the information recording medium.

[6] The optical information reproduction device according to Claim 1, wherein the first light source is a semiconductor laser.

[7] The optical information reproduction device according to Claim 1,

wherein the first light source further emits recording light with a wavelength of λ_2.

[8] The optical information reproduction device according to Claim 1, further comprising a second light source for emitting recording light with a wavelength of λ_2.

[9] The optical information reproduction device according to Claim 8, wherein the second light source is a semiconductor laser.

[10] The optical information reproduction device according to Claim 7 or 8, wherein the objective lens focuses the recording light on a recording unit included in the recording unit, and

the recording light focused on the recording unit includes as its main component a polarized light component that is polarized perpendicular to the track direction of the information recording medium.

[11] The optical information reproduction device according to Claim 7 or 8, wherein the objective lens focuses the recording light on a recording unit included in the information recording medium, and

the wavelength λ_1 of the reproduction light is different from the wavelength λ_2, of the recording light and said optical information reproduction device further comprises an optical component, located along the optical path between the first light source and the objective lens, for switching between a polarization state of reproduction light emitted from the first light source and a polarization state of recording light emitted from the first light source or the second light source, and for utilizing this difference in wavelength so that the reproduction light focused on the recording unit will

include as its main component a polarized light component that is polarized perpendicular to the track direction of the recording unit, and so that the recording light focused on the recording unit will be circularly polarized light.

[12] The optical information reproduction device according to Claim 11, wherein the optical component functions substantially as a $\lambda_1/2$ integer multiple plate with respect to the reproduction light, and functions substantially as a $\lambda_2/4$ plate with respect to the recording light.

[13] The optical information reproduction device according to Claim 7 or 8, wherein the wavelength λ_1 of the reproduction light is shorter than the wavelength λ_2 of the recording light.

[14] The optical information reproduction device according to Claim 7 or 8, wherein the recording light is pulsed light, and information is recorded by using nonlinear absorption.

[15] The optical information reproduction device according to Claim 1, further comprising a pinhole plate that is disposed along the optical path between the information recording medium and the first photodetector, and has a pinhole that transmits light conveying target information included in the reflected light.

[16] The optical information reproduction device according to Claim 1, wherein a surface area of a light-receiving component provided in the first photodetector is set to an area over which light conveying target information included in the reflected light is received.

[17] The optical information reproduction device according to Claim 15, further comprising a second photodetector for detecting focus/track error signals, and a focus/track error signal detection element that is disposed along the optical path between the information recording medium and the second photodetector, for splitting the reflected light,

wherein at least one of the beams split apart by the focus/track error signal detection element is guided to the second photodetector without passing through the pinhole.

[18] The optical information reproduction device according to Claim 1, wherein the recording marks are voids.

[19] The optical information reproduction device according to Claim 1, wherein the recording marks are recording pits produced by refractive index changes.